

GENERAL PERMIT WMGR098

BENEFICIAL USE OF WASTE FOUNDRY SYSTEM SAND AND SAND SYSTEM DUSTS GENERATED BY FERROUS METAL FOUNDRIES AND STEEL FOUNDRIES FOR USE AS A CONSTRUCTION MATERIAL, OR AS A SOIL AMENDMENT OR SOIL ADDITIVE.

DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT
DIVISION OF MUNICIPAL and RESIDUAL WASTE

March 2014

Expires: March 18, 2024

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A. Description:

The approval herein granted is limited to the beneficial use of waste foundry system sand and sand system dusts (hereinafter referred to as waste foundry sand) generated by ferrous metal foundries and steel foundries [North American Industry Classification System (NAICS) Codes 33151, 331511, 331512, 331513] for use as a construction material, or as a soil additive or soil amendment, provided the waste foundry sand does not exceed the chemical limits in Condition 9, and conforms with the applicable engineering properties as the raw material it is being substituted for. All such uses shall be consistent with applicable standard engineering or other professional or industry practices and procedures.

This approval only applies to waste foundry sand from clay-bonded molds generated by ferrous metal foundries and steel foundries or such foundries that utilize chemical binders only in the core making process.

B. Determination of Applicability Requirements:

A person or municipality that proposes to operate under terms and conditions of this general permit after the date of permit issuance must obtain a "Determination of Applicability" ("DOA") from the appropriate Department Regional Office (see attached list) prior to commencing authorized activities under this general permit. A completed (i) General Information Form (Authorization Application for a Residual or Municipal Waste General Permit Application), (ii) Form B (Professional Certification), (iii) Form 20 (Application for a Municipal or Residual Waste General Permit), (iv) Form 27R (Acceptance of General Permit Conditions), (v) Form HW-C (Compliance History), and (vi) a DOA application fee in the amount identified in Section A (General Information) of the Form 20 must be submitted to the appropriate Department Regional Office. A check shall be made payable to the "Commonwealth of Pennsylvania." No activities shall commence unless approved, in writing, by the Department.

C. Operating Conditions:

1. All activities conducted under the authorization granted in this permit shall be conducted in accordance with the permittee's application. Except to the extent that the permit states otherwise, the permittee shall operate its facilities covered by the general permit as described in the approved application.
2. This permit does not authorize and shall not be construed as an approval to discharge any industrial wastes, wastewater, leachate, or runoff from the land application sites to the waters of the Commonwealth.

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3. The permittee shall comply with the terms and conditions of this general permit and with the environmental protection acts to the same extent as if the activities were covered by an individual permit. The Department may require an individual permit if the permittee is not in compliance with the conditions of this general permit or is conducting an activity that harms or presents a threat of harm to the health, safety, or welfare of the people or the environment.
4. Nothing in this permit shall be construed to supersede, amend, or authorize a violation of any of the provisions of any valid and applicable local law, ordinance, or regulation, provided that said local law, ordinance, or regulation is not preempted by state or federal law. Nothing in this general permit shall be construed to supersede, amend, or authorize a violation of any of the provisions of any valid state or federal law or regulation.
5. As a condition of this permit and of the permittee's authority to conduct the activities authorized by this permit, the permittee hereby consents to allow authorized employees or agents of the Department, without advance notice or search warrant, upon presentation of appropriate credentials and without delay, to have access and to inspect all areas and permittee controlled adjacent areas where solid waste management activities are being or will be conducted. This authorization and consent shall include consent to collect samples of waste, water, or gases; to take photographs; to perform measurements, surveys, and other tests; to inspect any monitoring equipment; to inspect the methods of operation; and to inspect documents, books, and papers required by the Department to be maintained or produced. (See Sec. 608 and 610(7) of the Solid Waste Management Act, 35 P.S. Sections 6018.608 and 6018.610(7).) This condition in no way limits any other powers granted to the Department under the Solid Waste Management Act.
6. Failure of the measures herein approved to perform as intended, or as designed, or in compliance with the applicable laws, rules and regulations and terms and conditions of this permit, for any reason, shall be grounds for the revocation or suspension of the permittee's approval to operate under this permit.
7. Any independent contractors or agents retained by the permittee in the completion of activities authorized under this permit shall be subject to compliance history review by the Department prior to performance as specified by the Pennsylvania Solid Waste Management Act of 1980.
8. The activities authorized by this permit shall not harm or present a threat of harm to the health, safety, or welfare of the people or environment of this Commonwealth. The Department may modify, suspend, revoke, or reissue the authorization granted in this

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permit if it deems necessary to prevent harm or threat of harm to public health or the environment.

9. Waste foundry sand shall not be used as construction material, soil additive or soil amendment or otherwise placed directly into the environment if any of the total or leachable levels in Table 1 are exceeded.

Table 1		
<u>Inorganic Parameters</u>	<u>Total Levels (mg/kg)</u>	<u>Leachable levels (mg/L)⁽¹⁾</u>
Aluminum	---	5.0
Antimony	27	0.15
Arsenic	12	1.25
Barium	5000	50.0
Beryllium	1.0	0.10
Boron	1000	3.15
Cadmium	20	0.125
Chromium (total)	500	2.5
Chromium (hexavalent)	94	---
Copper	700	32.5
Cyanide (total)	---	0.2
Fluoride	---	7.5
Iron	---	30
Lead	200	1.25
Manganese	500	2.5
Mercury	10	0.05
Molybdenum	100	4.375

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Nickel	200	2.5
pH	5.5 to 11.5	---
Selenium	26	1.0
Silver	84	2.5
Thallium	6.0	0.0125
Zinc	1000	125
<u>Organic Parameters</u>		
Benzene	0.8	0.005
Benzoic Acid	0.57	---
Ethylbenzene	70	0.7
Naphthalene	8.0	---
PHCs (total) ⁽²⁾	500	---
Phenanthrene	80	---
Phenolics (total)	400	21
Resorcinol ⁽³⁾	0.08	---
Toluene	100	1.0
TOX ⁽⁴⁾	50.0	---
1,2,4 – Trimethylbenzene	11.0	---
Xylene (total)	1000	10.0
PCBs (for mine sands only)		
Non-residential uses ⁽⁵⁾	2	---
Residential uses ⁽⁵⁾	1	---

The determination of compliance with Table 1 may be based on the 90 percent upper confidence level for each metal or the 80 percent upper confidence level for pH using

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the "Test Methods for Evaluating Solid Waste (EPA SW-846)" as guidance for the statistical treatment of data.

(1) = Leachability evaluations shall be conducted using the Toxicity Characteristic Leaching Procedure (EPA Method 1311) or the Synthetic Precipitation Leaching Procedure (EPA 1312).

(2) = Petroleum Hydrocarbons

(3) = AKA m-dihydroxbenzene or 1,3 - (HO)₂C₆H₄

(4) = Total Organic Halogens

(5) = The sample preparation for PCB determinations shall be EPA Method 3545.

10. Prior to the first beneficial use of any waste foundry sand as a construction material or where placed directly into the environment under the provisions of this permit, a representative sample of the waste foundry sand shall be analyzed for the total and leachable levels for each parameter listed in Condition 9. The chemical analyses required in this Condition shall be performed by a laboratory that is in compliance with the Pennsylvania Environmental Laboratory Accreditation Act, Act of 2002, No. 90, 27Pa C.S. Section 4101 et seq. If any changes are made in the types of sand binder systems, coatings, or types of metals, or metal alloys being cast, the waste foundry sand must be reanalyzed prior to the beneficial use of the altered waste foundry sand. All samples of waste foundry sand taken for analysis must be taken at the point where the spent waste foundry sand is discharged from the generating facility prior to storage and/or beneficial use.
11. Waste foundry sand obtained from the excavation or "mining" of storage stockpiles or previously disposed piles of waste foundry sand shall not be used for beneficial use purposes without first being analyzed for compliance with the chemical parameters specified in Condition 9 and the binders' limitations specified in Section A. Samples from these storage stockpiles or disposal piles shall be collected and tested at a minimum frequency of:
- a. For the inorganic parameters in Condition 9, one grab sample for every 50 tons of waste foundry sand which is excavated or mined. These grab samples shall be composited into a single sample, which is to be analyzed every 1000 tons of waste foundry sand, is excavated or mined from existing stockpiles for beneficial use purposes.

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- b. For the organic parameters in Condition 9, one grab sample shall be collected and analyzed for every 1000 tons of waste foundry sand excavated or mined from existing stockpiles.
- c. For existing stockpiles or disposal piles over 500 yd³ in volume, the permittee must characterize the stockpile or disposal pile in accordance with procedures and methods specified in SW-846 and obtain specific written approval from the Department to utilize the waste foundry sand under this general permit. All applicable MSDSs should also be provided with this analytical data.

Should knowledge of the generation process, visual observations, or analytical results indicate variability in the quality of the waste foundry sand, more frequent testing shall be conducted.

- 12. The permittee shall inform all persons or municipalities which propose to beneficially use waste foundry sands covered under this permit of all the conditions and limitations imposed on the use of waste foundry sand by the Department of Environmental Protection. This notification shall be by providing a copy of Appendix "A (Use Restrictions) of this permit. The conditions in Appendix A also apply to any permittee who obtains a Determination of Applicability to conduct activities authorized by this permit. The permittee shall record the name and address of each person who is given or purchases the waste foundry sand and shall record its intended use. This information shall be included in the annual report required in Condition ____.
- 13. Equipment used for the storage and transportation of the waste foundry sand shall be maintained in good operating condition to prevent wastes from being unintentionally conveyed out of the storage area. Weekly inspections of each storage area and their surrounding environs are to be conducted to determine permit compliance. The storage and transportation of waste foundry sand shall be in a manner which does not create a nuisance or be harmful to the public health, safety or the environment and shall comply with the requirements of 25 PA Code Chapter 299 (relating to storage and transportation of residual waste).
- 14. Upon cessation of foundry and storage operations, the permittee shall remove any remaining waste foundry sand and any other residual wastes or other materials which contain or have been contaminated by the waste foundry sand and shall provide for the processing and disposal of the waste or material in accordance with the Solid Waste Management Act, the environmental protection acts and the regulations promulgated thereunder.
- 15. The permittee shall comply with the Air Pollution Control Act, 35 P.S. §§ 4001 – 4016, and the regulations promulgated under the Act, including Chapter 123, Standards for

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Contaminants, Fugitive Emissions at 25 Pa. Code §§ 123.1 and 123.2 and Odor Emissions at 25 Pa. Code § 123.31.

16. The permittee shall maintain at the generating facility an updated copy of a Preparedness, Prevention, and Contingency (PPC) Plan for the facility prepared in accordance with the most recent edition of the Department's "Guidelines for the Development and Implementation of Environmental Emergency Response Plans." The PPC Plan shall be updated every 5 years.
17. The waste foundry sand authorized under the terms and conditions of this general permit shall cease to be a waste if the following requirements are met:
 - a. The waste foundry sand complies with the requirements as specified in Section A and Condition 9 of this general permit;
 - b. The waste foundry sand is sold, traded, distributed, or given away for the uses specified in this general permit;
 - c. The waste foundry sand is not abandoned or disposed;
 - d. The beneficial use of the waste foundry sand complies with the terms and conditions specified in Appendix A "User Restrictions" of this general permit.

D. Record Keeping:

Records of any analytical evaluations conducted on the waste foundry sand pursuant the residual waste regulations shall be kept by the permittee at the permittee's place of business and shall be available to the Department for inspection. At a minimum, these records are to include information on the dates of testing, each parameter tested, the results, the laboratory, sampling procedures, analytical methodologies, and person collecting the sample. This waste analysis information shall be retained by the permittee at the permittee's place of business for a minimum of 5 years after the analyses were performed.

E. Reporting Requirements:

1. The permittee shall immediately notify the Department, in writing, of any changes in: the name, address, owners, operators and/or responsible officials of the company; changes in facility location; changes in land ownership or the right to operate on the land occupied; the physical or chemical characteristics of the waste foundry sand; the manufacturing process which generates the waste; and any change the in status of any permit issued by the Department or federal government under the environmental protection acts.

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2. Persons operating under the provisions of this general permit shall submit, by the anniversary date of this permit, to the appropriate Department Regional Office, an annual report which contains the information outlined in Condition 12 and summarizes the weight and volume of the waste foundry sand sold, traded or given away during the last 12 months. In addition, the annual report must also include the following:

A "total" and "leaching" analysis performed on a representative sample of the waste foundry sand annually for all parameters listed in Table 1 of Condition 9 of this permit. After a satisfactory initial analysis has been completed and submitted to the Department, in lieu of the annual analysis, an authorized representative of the generator may sign and submit to the Department, an analysis certification for all parameters listed in Table 1 that do not exceed 65% of the specified permit limit and the process by which the waste foundry sand was generated has not changed from that specified in the original permit application. However, this analysis certification may only be used for (5) consecutive years, after which the complete analysis required in Condition 9 must once again be completed.

F. Renewal:

A person or municipality that plans to continue the operations authorized under this general permit, after the expiration date indicated on the approval for coverage page, shall file a complete application for permit renewal at least 180 days before the expiration date of this general permit unless permission has been granted by the Department for submission at a later date. The renewal application shall be made using the "Form 20 (Application For a Municipal or Residual Waste General Permit)". The renewal shall be sent to the attention of the Department's Bureau of Waste Management, Rachel Carson State Office Building, 400 Market Street, P.O. Box 69170, Harrisburg, PA 17106-9170.

In the event that a timely and complete application for renewal has been submitted and the Department is unable, through no fault of the permittee, to reissue the general permit or approval for coverage before its current coverage expiration date, the terms and conditions of the approved coverage will automatically continue and will remain fully effective and enforceable pending the issuance or denial of the renewal for permit coverage, provided the permittee is, and has been, operating in compliance with the terms and conditions of the general permit.

APPENDIX A
Use Restrictions
General Permit No. WMGR098

The following uses and restrictions apply to the beneficial use of waste foundry sands and sand system dusts generated by ferrous metal foundries and steel foundries [North American Industry Classification System (NAICS) Codes 33151, 331511, 331512, 331513] for use as a construction material, or as a soil additive or soil amendment. Each beneficial use of waste foundry sand is limited to the amount that is customarily and commonly appropriate in practice. Persons receiving, storing and/or using the waste foundry sand for beneficial use purposes must comply with the following:

ACCEPTABLE USES:

- A1. Approval is granted for use of waste foundry sand in the following applications provided its use meets and satisfies the requirements of the following standards where applicable. All such uses shall be consistent with applicable standard engineering or other professional or industry practices and procedures.
- a. As a construction material: Waste foundry sand may be used as construction material in the base and/or sub-base under roads, sidewalks, parking lots, athletic fields and buildings, in embankments, as pipe bedding, as trench backfill, as backfill on locations where underground storage tanks or petroleum-contaminated soil has been removed. Areas where waste foundry sand is used as a construction material shall either be paved or covered with a minimum of six inches of vegetative supporting soil or cover by a building or other structure. For unpaved parking lot areas a minimum of six inches of stone or other non-waste aggregate must be used to cover the waste foundry sand. For embankment use the waste foundry sand must be covered with a minimum of 6 inches of vegetative supporting soil or non-waste aggregate.
 - b. As a soil additive or soil amendment: Waste foundry sand may be used as a soil additive or soil amendment to replace soil that was previously available at a site, in order to enhance soil properties and to enhance plant growth provided the organic carbon fraction of the soil (before blending with waste foundry sand) is at least 0.25%.

USE RESTRICTIONS:

- A2. Waste foundry sand shall not be placed in direct contact with surface water or groundwater and, except for bagged soil products, placed or used in any construction activity within 100 feet of a perennial stream, 300 feet of an exceptional value wetland or 300 feet of a private or public water source.

- A3. Waste foundry sand shall not be used as a valley fill material, to fill open pits from coal or non-coal mining or other fills or to seal boreholes or water wells. The waste foundry sand may be used as embankment material to level an area or bring an area to grade where a construction activity is completed or will commence within three months after the placement of the waste foundry sand. In the case of a multi-phase construction project (such as development of a commercial/industrial park), all waste foundry sand shall be covered within sixty days of completion of fill placement, unless it is uncovered as a requirement of ongoing active phase construction.
- A4. Hazardous waste, municipal waste, special handling waste, and other residual wastes may not be mixed and/or stored or beneficially used with the waste foundry sand without prior written approval by the Department on a case-by-case basis or under the authority of another general permit.
- A5. Waste foundry sand shall not to be stored for more than one year unless specifically approved by the Department in writing.
- A6. The storage, transportation or use of the waste foundry sand shall be in a manner that will not create a nuisance or be harmful to the public health, safety or the environment.
- A7. Runoff from the waste foundry sand storage areas shall not cause surface water pollution or groundwater degradation and shall be managed in accordance with The Clean Streams Law and regulations promulgated thereunder.